

IN THE CLAIMS:

Please CANCEL claims 1-12 without prejudice to or disclaimer of the recited subject matter.

Please ADD new claims 13-21, as follows. For the Examiner's convenience, all claims currently pending in this application, including those not currently being amended, have been reproduced below.

1-12. (Cancelled)

13. (New) A position detecting system comprising:

light source means;

a first optical system having a stop;

a beam splitter for dividing light from said light source means and passed through said first optical system, wherein light beams divided by said beam splitter are respectively contributable to form an image of said stop;

a second optical system for illuminating a target with light from an image of said stop as formed by one of the divided light beams;

a reflecting member disposed at a position at which another divided light beam forms an image of said stop; and

image pickup means, wherein light from the target and light reflected by a reflecting surface of said reflecting member are re-combined to produce an image signal upon said image pickup means.

14. (New) A position detecting system according to Claim 13, wherein said light source means provides coherent light.

15. (New) A position detecting system according to Claim 14, further comprising light diffusing means movably disposed along a light path within said position detecting system.

16. (New) A position detecting system according to Claim 13, wherein said beam splitter is a polarization beam splitter.

17. (New) A position detecting system according to Claim 13, wherein the target and the image of said stop are optically conjugate with each other.

18. (New) A position detecting system according to Claim 13, wherein said light source means includes a plurality of light sources providing different wavelengths.

19. (New) A position detecting system according to Claim 13, wherein the target comprises a mark provided on an object and having a surface with a surface level difference with respect to a direction of an optical axis of said optical system, and wherein said image pickup means is operable to detect an image signal related to the mark, at a position, as the object is moved along the optical axis direction, corresponding to a peak value at which a difference in reflection factor between a top and a bottom of the surface level difference of the mark is large.

20. (New) An exposure apparatus comprising:

position detecting means for detecting a position of an alignment mark provided on a surface of a workpiece to be exposed, said position detecting means including (i) light source means, (ii) a first optical system having a stop, (iii) a beam splitter for dividing light from said light source means and passed through said first optical system, wherein light beams divided by said beam splitter are respectively contributable to form an image of said stop, (iv) a second optical system for illuminating a target with light from an image of said stop as formed by one of the divided light beams, (v) a reflecting member disposed at a position at which another divided light beam forms an image of said stop, and (vi) image pickup means, wherein light from the target and light reflected by a reflecting surface of said reflecting member are recombined to produce an image signal upon said image pickup means; and

exposure means for aligning the workpiece on the basis of positional information related to a position of the alignment mark with respect to a direction along the surface of the workpiece and produced on the basis of the image signal, and also for performing a pattern exposure to the workpiece.

21. (New) A device manufacturing method comprising:

a position detecting step for detecting a position of an alignment mark provided on a surface of a workpiece to be exposed, by use of a position detecting system including (i) light source means, (ii) a first optical system having a stop, (iii) a beam splitter for dividing light from the light source means and passed through the first optical system, wherein light beams divided by the beam splitter are respectively contributable to form an image of the stop, (iv) a second optical system for illuminating a target with light from an image of the stop as formed by one of the divided light beams, (v) a reflecting member disposed at a position at which another divided light beam forms an image of the stop, and (vi) image pickup means, wherein light from the target and light reflected by a reflecting surface of the reflecting member are recombined to produce an image signal upon the image pickup means;

a pattern exposure step for aligning the workpiece on the basis of positional information related to a position of the alignment mark with respect to a direction along the surface of the workpiece and produced on the basis of the image signal, and also for performing a pattern exposure to the workpiece; and

a development step for developing the workpiece having been exposed through said pattern exposure step, whereby a device pattern can be produced from the developed workpiece.